

### Abstract of th Disclosure

A fatigue safety factor testing apparatus includes a FEM calculating section, a normalized stress calculating section and a fatigue safety factor calculating section. The FEM calculating section carries out a FEM calculation to meshes of a part to calculate a stress of each of the meshes of the part. The normalized stress calculating section calculates a normalized stress of a stress applied to each of the meshes with respect to a fatigue limit as a function of a temperature and material of each of the meshes. The fatigue safety factor calculating section calculates a fatigue safety factor of each of the meshes based on a normalized fatigue limit obtained by normalizing the fatigue limit and the normalized stress.